Background: Ceftaroline (CPT), the active metabolite of the oral antibiotic ceftaroline fumarate (CFT), is a bactericidal agent in vitro activity against methicillin-resistant S. aureus (MRSA), CPT broth was approved by the FDA in 2012 for treatment of acute bacterial skin infections (ABSI) associated with community-acquired bacterial pneumonia.

Methods: Among 16,413 organisms consecutively collected from patient-bacteria associates in the NISBE surveillance program (2004-2014), 1,380 (8.4%) were from cases where SSIs were reported as the primary site of infection. These organisms were collected in 24 medical centers in the USA and tested for susceptibility (S) against CPT and comparators by the broth microdilution method.

Results: The most common organisms isolated from bacteria associated with SSIs were S. aureus (870; 63.2%), E. coli (487; 35.3%), and S. pyogenes (52; 3.8%). The MICs for CPT and comparators by reference broth microdilution methods demonstrated intermediate to susceptibility for most Enterobacteriaceae species and MRSA, respectively. The susceptibility rates (S) for CPT and comparators are provided in Table 1 and Supplementary Table 1.

Discussion: CPT is a cephalosporin with antimicrobial activity that has been approved for clinical use in the United States (US; in 2013) and Europe (in 2012; ZebraCor). The clinical trial-based phase 3 trial, double-blind, multicenter, clinical trial for the treatment of community-acquired bacterial pneumonia (CAPIT) and acute bacterial skin and skin structure infection (ABSSSI) demonstrated non-inferiority to comparator agents. CPT has not been evaluated in randomized clinical trials in community-acquired bacterial pneumonia, and is not approved by the US-FDA or by the European Medicines Agency for this indication, however, its in vitro activity against methicillin resistant S. aureus (MRSA), bàcteriaemias and endocarditis, especially as salvage therapy generally in combination with other agents. In the present study, we evaluated the frequency of occurrence and antimicrobial susceptibility of bacterial organisms causing bloodstream infections (BSI) in patients with skin and skin structure infections (SSSI) in US medical centers.

Conclusions: CPT and cefazolin provided the best in vitro overall coverage across the collection of Gram-positive and negative bacteria.


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References

Sustainable Testing: Isolates were tested for susceptibility to cefazolin and ceftaroline fumarate (CFT) according to the Clinical and Laboratory Standards Institute (CLSI) guidelines and were collected from patients with skin and skin structure infections (SSSI) in the USA as part of a surveillance program conducted by HELIO SADER. The MICs were interpreted according to CLSI guidelines, and the susceptibility rates (S) were provided in Table 1.